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ABSTRACT

Summer Tech '83 was a joint venture of the College of Education of Ohio State University and the Columbus Ohio Public Schools to provide instruction on the use of microcomputers to citizens of the Columbus metropolitan area. For 4 weeks 53 different 10-hour classes were offered in 7 broad areas: introductory computer literacy, programing, word processing, business use of microcomputers, home use, educational use, and advanced computing. A total of 10,620 registrations were processed for the classes offered; participants ranged in age from 4 to 82, with a median age of 34. Classes were held in a middle school and utilized 300 Apple IIe microcomputers and related software. This paper describes the evaluation of Summer Tech '83 by instructors, participants, and program designers (including administrators, course developers, and evaluators). The development and use of four evaluation forms and the administration of interviews with members of the Summer Tech '83 steering committee are outlined. Evaluation findings are listed, indicating that instructors viewed their inservice training for the program as interesting and exciting; 34% of the instructors viewed all of the instructional activities provided as appropriate; most instructors were enthusiastic, worked well with students, and encouraged questions; and more than 90% of the participants enjoyed their class. Recommendations for revising the program when it is repeated in the summer of 1984 are provided. (ESR)

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Evaluating Summer Tech '83: A Program to Meet the Microcomputer Needs of the Community

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Program Description

Summer Tech '83 was a joint venture of the College of Education of The Ohio State University and The Columbus Ohio Public Schools to provide instruction on the use of microcomputers to citizens of the Columbus Metropolitan area. For four weeks from July 18 through August 12, classes consisting of ten hours of instruction were offered in 53 different courses. The 53 courses were classified into seven broad areas - introductory, programming, word processing, business, home use, educational use, and advanced. Classes began on the half hour from 7:30 a.m. until 7:30 p.m., Monday through Friday. In all, 10,620 registrations were processed for the classes offered. Classes were held in a middle school in the downtown area and utilized 300 Apple //e microcomputers and related software purchased with district funds or donated by the business community. Upon completion of the Summer Tech program, the microcomputers were installed in laboratories in all of the high schools.

The program was planned by an 18 member Steering Committee composed of faculty of the College of Education and staff of the Columbus Public Schools. The Committee met every Thursday morning beginning on March 31, 1983 and running through July 14. All aspects or components of course syllabi, instructor training, and evaluation design were developed in that three and one half month time frame. Both university and school system personnel perceive the Summer Tech program as a model for the acquisition of microcomputers for school systems, while providing community education in microcomputing.

Evaluation Design

The general evaluation scheme was to collect a variety of data from multiple sources, so that the evaluation would reflect a wide range of information and viewpoints. The evaluation was designed using various modes to tap the attitudes, perspectives, and experiencs of the instructors, participants, and program designers, (i.e., administrators, course developers, and evaluators). The following brief description highlights the various data collected from the three major sources.

The instructors were requested to respond to two short answer survey forms. These forms collected their opinions and recommendations regarding the instructor training program and the overall Summer Tech program. Additionally, a select group of instructors were enrolled in a university course specifically designed to integrate the Summer Tech experience into a broader educational experience. This latter group also responded to evaluation issues surrounding Summer Tech through course activities. Recommendations from these individuals were used in making modifications to the summer program and for similar future activities.

Course participants were asked to respond to a 21 item course evaluation form, with one exception. Those students enrolled in the "Computer for Kids" course were as young as four years of age and could not be expected to complete nor understand the evaluation form. These children were excluded from the written evaluation form. Additional participant and general classroom information was collected

using classroom observers and a data collection checklist. This techniques became particularly helpful in collecting data regarding the children and activities in the "Computer for Kids" courses, and was also used with a representative sample of the course areas. These data provided program designers with information relevant to course content, program offerings, and administrative concerns for activities subsequent to Summer Tech '83.

The program designers were interviewed at the end of the summer program using an open-ended format. Questions were designed to capture those aspects of the process which might otherwise be lost. Through this "debriefing" interview, perceptions and experiences were collected to document the program and assist in future planning.

Evaluation Methods

Five instruments were developed as part of the evaluation of Summer Tech '83. The instruments and the administration procedures are described briefly below. Each instrument was reviewed by the appropriate Steering Committee members and modified as required. Due to the limited time frame, none of these instruments was formally field tested.

The Inservice Evaluation Form was designed to assess the perceptions of participants in the instructor inservice towards their

inservice training and to acquire a self-reported analysis of their skills in the use of microcomputers. The instrument was administered upon completion of the instructor inservice training.

The Course Evaluation Form was designed to collect information specific to course content from instructors to be used to improve the course syllabus for future use. The Course Evaluation Form was administered during the last week of Summer Tech '83.

The Course Observation Form was designed for use by an observer to record the physical conditions in the classroom setting, the occurrence of certain instructor behaviors, and the activities of students within the classroom. Observations were conducted for a sample of course topics for each of the four weeks.

The Summer Tech Class Survey was designed to assess the general impressions of students towards instructors, course content, the instructional process, and the utility of the course for them. Other items on the survey were designed to evaluate the communications plan used to publicize Summer Tech and to determine the types of courses that participants would like to take next as a basis for planning subsequent programs.

The Follow-up Interview Schedule was used by evaluation staff of the school system to interview the 18 members of the Steering Committee upon the completion of Summer Tech. The interviews focused on strengths and weaknesses of the program, cooperation among the

school system, the university, and the business community, the degree to which expectations for Summer Tech were met, and suggestions for improvement of the program.

An additional set of evaluation information regarding participants was gathered by extracting data from the computerized registration files. Data included a limited number of demographic and geographic characteristics which were related to participant opinions, impressions, and future course needs. This has provided information relative to educational needs of the community that can be categorized by population characteristics or by location within the metropolitan area.

The instruments were developed with the assistance of three graduate students in the Department of Educational Foundations and Research at Ohio State under supervision of the authors. In addition, these students conducted the classroom observations receiving individual study credit for their activities.

Major Findings

The following statements are intended to reflect the overall opinions, impressions, or factual information regarding the three sources of data: the course instructors, the participants, and the program designers. This summation is the aggregate of information gathered based on input from 35 course instructors, over 10,000 registrants, and the 18 member Steering Committee (program designers). It only highlights the major findings and is not intended to be an exhaustive listing.

Instructors

These statements reflect the opinions and recommendations of the course instructors based on the Inservice Evaluation Form and the Course Evaluation Form or are observations regarding the instructors based on the Course Observation Form. The following are instructors' comments based on the Inservice Evaluati n Form:

- Instructors viewed the inservice experience as interesting and exciting.
- Although the instructors were familar with a variety of computers, the Apple //e was new, creating a need for adjustment.
- The advanced instructors desired less inservice training and more software experience.
- Many felt insecure going into the teaching environment due to the newness of the software.
- Many felt insecure teaching adults, especially if their experience was primarily with elementary age children.

The following are instructors' comments based on the Course Evaluation Form:

- 34% of the instructors viewed all of the provided instructional activities as appropriate; 29% viewed some of them as appropriate.
- Only 6% had considerable problems with the software used in the class.
- Half of the instructors did use additional software that was not suggested in the written course materials.
- Overall, each instructor evaluated the quality of his/her course as interesting and useful.

The following are observations with regard to the instructors based on the Course Observation Form:

- The more effective instructors tended to generate opportunities for participants to review concepts.
- In most classes, the instructor worked individually with students.
- Most instructors were enthusiastic, worked well with students, and encouraged questions.
- Most instructors left half of the instructional period for practice.

Participants

Data regarding the opinions and characteristics of the participants were collected with the Class Survey and from registration information. Additional information was gathered through observations using the Course Observation Form.

The following are summary statements based on the Class Survey:

- 62.4% of the students were female.
- Almost three fourths (72.7%) considered themselves as having little or no experience with microcomputers.
- More than 90 percent of the respondents agreed that most people can learn to use microcomputers, that they would like to take more microcomputer classes, that they want to learn more about microcomputers, and that they enjoyed the class.
- Over half (50.1%) of the students indicated that they would next like to take a course in programming.
- Over a third (33.5%) of the students indicated that they would next like to take a course in word processing.

The following are based on data from the registration file:

- 38.6% of students took introductory courses
- 36.6% of the students took programming courses
- Registrants ranged in age from 4 to 82 with a median age of 34.

The following are observations with regard to participants based on information obtained using the Course Observation Form:

- Children enjoyed playing with the computer robots.
- Class discipline was a problem in some of the "Computer for Kids" classes.
- Participants tended to help each other.
- Participants discussed more and more freely in "classes for educators."
- Participants tended to work on their own and continuously.
- Participants were intent and rarely noticed classroom visitors or observers.

Program Designers

The following statements reflect the opinions and recommendations of the program designers, i.e., administrators, course developers, and evaluators. These are based on the follow-up "debriefing" interviews:

- A major strength of the program was improved interaction and cooperation between the school system and the university.
- There was a professional excitement about the scope and size of the program.
- Suggestions were provided for improving the registration process which was perceived as a weakness of the program.
- Suggestions were provided for improving the public relations campaign for the program.

Recommendations for Changing the Evaluation Design and Process

With modifications, the Summer Tech '83 program is being repeated during the Summer of 1984. Based on our experience in 1983, we are considering the following changes in the evaluation design and process for Summer Tech '84:

- Include observations of students in programming courses to determine the extent to which students can complete assignments by themselves, with assistance, or not at all to acquire a measure of the extent to which students are achieving the objectives of the course. The use of tests to acquire these data is not feasible in terms of time required for administration and the general philosophy of the program as a positive, non-threatening experience for participants.

- Include self-appraisal items in course surveys to access the extent to which participants perceive that they have achieved the objectives of the course.

- Chronicle the decision making process of the Steering Committee in order to provide information to other districts regarding the potential and process of the Summer Tech model for their district.

- Provide formal training to the observers. To provide valid and reliable data, observers must be skilled in the use of a particular observation system or trained as qualified participant observers.

- Analyze each instrument for relevance. It was difficult to create an instrument which examined the courses in depth, yet generic enough to be used for all courses and by all ages.

- Develop a grid of data to be collected, by source and for purpose. Some data were more relevant than others; some data need not be collected a second year.